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A New Subspecies of *Parnassius cephalus* GRUM-GRSHIMAILO from Nepal Himalaya (Lepidoptera, Papilionidae)

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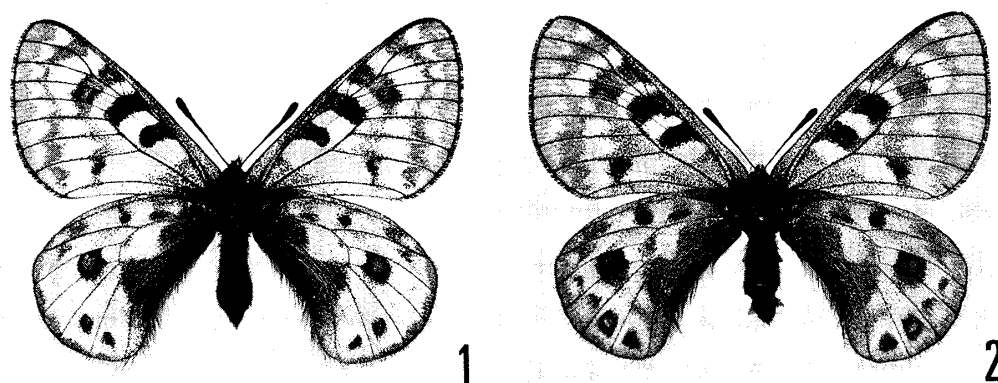
Mr. Katsuhiko HORI captured many high-altitude butterflies between Mustang and Dhaulagiri in Central Nepal during the summer season 1981 and 1983. Among the butterflies, he found the new subspecies of *Parnassius cephalus* GR.-GR., described in this paper.

The original description of *Parnassius cephalus* (by GRUM-GRSHIMAILO, 1891) is based on material from Amdo; to date, 11 further subspecies have been described. Although typically considered to be a Central Asian species it is in fact wide-ranging, being found from Kansu to Tsinghai, Szechwan, and South Tibet to East Kashmir, a similar distribution to *Parnassius acco* GRAY and *Parnassius acdestis* GR.-GR. Usually Central Asian *Parnassius* are more restricted. Subspecies occurring from Kansu to Tsinghai and Szechwan are very similar in wing shape and markings, but subsp. *maharaja* AVINOFF from Kashmir is superficially very different. Sometime it is treated as a good species, with the forewing-veins v11 (R_1) and v10 (R_2) consistently anastomosing, while the hindwing lacks both red and blue centred ocelli. from Tibet and North of Great Himalaya Range only two subspecies are known (subsp. *rileyanus* BRYK — Phuse La, near Rongchar Valley, 4800 m., Tibet, 1 ♀ Type; subsp. *pythia* H. ROTH — Tibu, west Gartok, 5000 m., Tibet, 1 ♀ Type). Besides these two subspecies, two specimens considered to represent *rileyanus* are known from Tibet, one from Lilung Valley and the other from Che La.

Parnassius cephalus horii ssp. nov.

(Figs. 1, 2)

♂. Length of forewing: 29.5–34 mm, average 31.2 mm. Upperside of forewing creamy-white; basal black scales not clear; cell spot short, 1.5–2 mm wide, not touching the median vein; end cell spot larger, 2–2.5 mm wide, curved slightly inwards; postmedian band interrupted, absent in s2 to s3, but sometime existed vestigially as black scales; hind margin spot small, often vestigial; subapical spots clear, rarely with red scales in s5 and s8; submarginal band thicker from slb to s3, extremely thinned from s4 to s5; apex pointed considerably; ciliae long, 0.6–0.7 mm length, black mixed white sparsely. Upperside of hindwing creamy-white; median ocellus large, orangish-red; costal ocellus very small, without red scales; spot between basal and costal ocellus clear; submarginal spots obscure apart from a clear blue centred ocellus on s3, rarely a little blue scaling appeared very rare on s2, which is lacking or nearly lacking on s4 to s5; anal band absent; ciliae white. Underside of



Figs. 1-2. *Parnassius cephalus horii* ssp. nov. 1. Holotype, ♂; 2. Paratype, ♀.

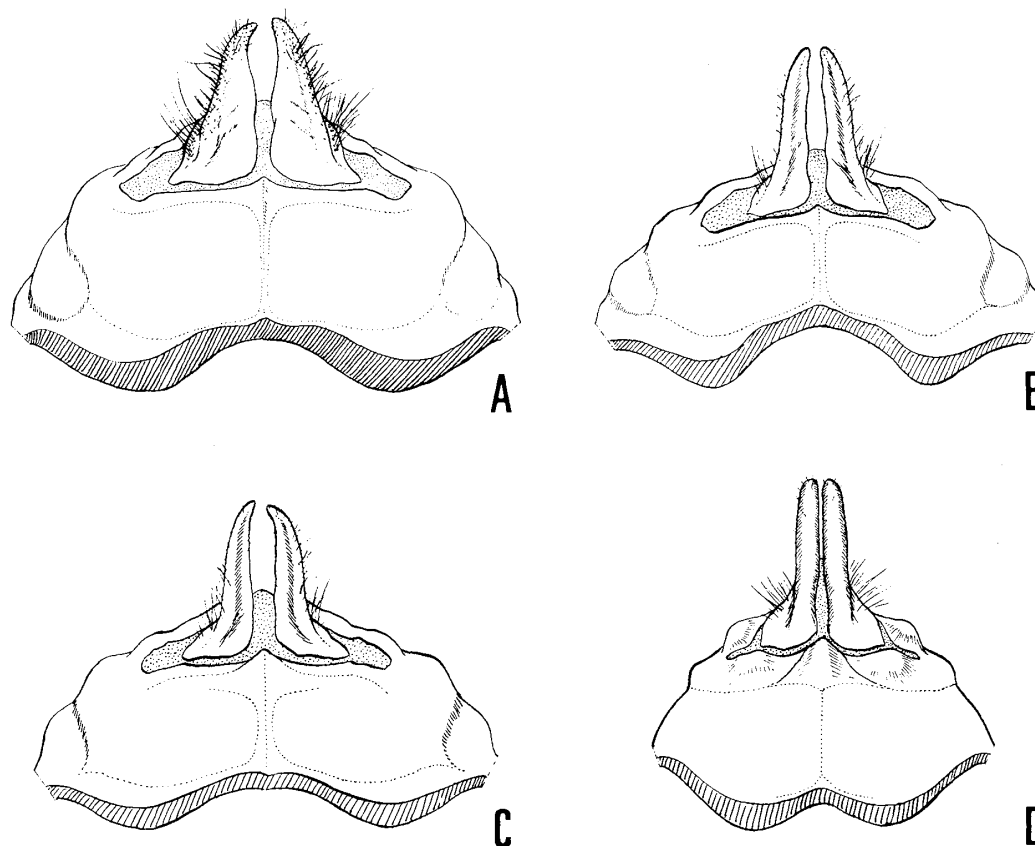


Fig. 3. Dorsa of male genitalia of *Parnassius cephalus* subspecies, dorsal aspect. A. *P. cephalus horii* ssp. nov.; B. *P. cephalus cephalus* GRUM-GRSHIMAILO; C. *P. cephalus elwesi* LEECH; D. *P. cephalus maharaja* AVINOFF.

wings glassy and translucent, not marked with scaled pattern.

♀. Length of forewing: 29.2–35 mm, average 32.5 mm. Upperside of forewing pure white; basal black scales clear; cell spot long, 2.5–3 mm wide, always touching the median vein; end cell spot larger, 2.5–3 mm wide, curved slightly inwards; postmedian band uninterrupted, broadened and with dark suffusion towards discal cell in s2 and s3; subapical spots clear; submarginal band very thick, almost touching the

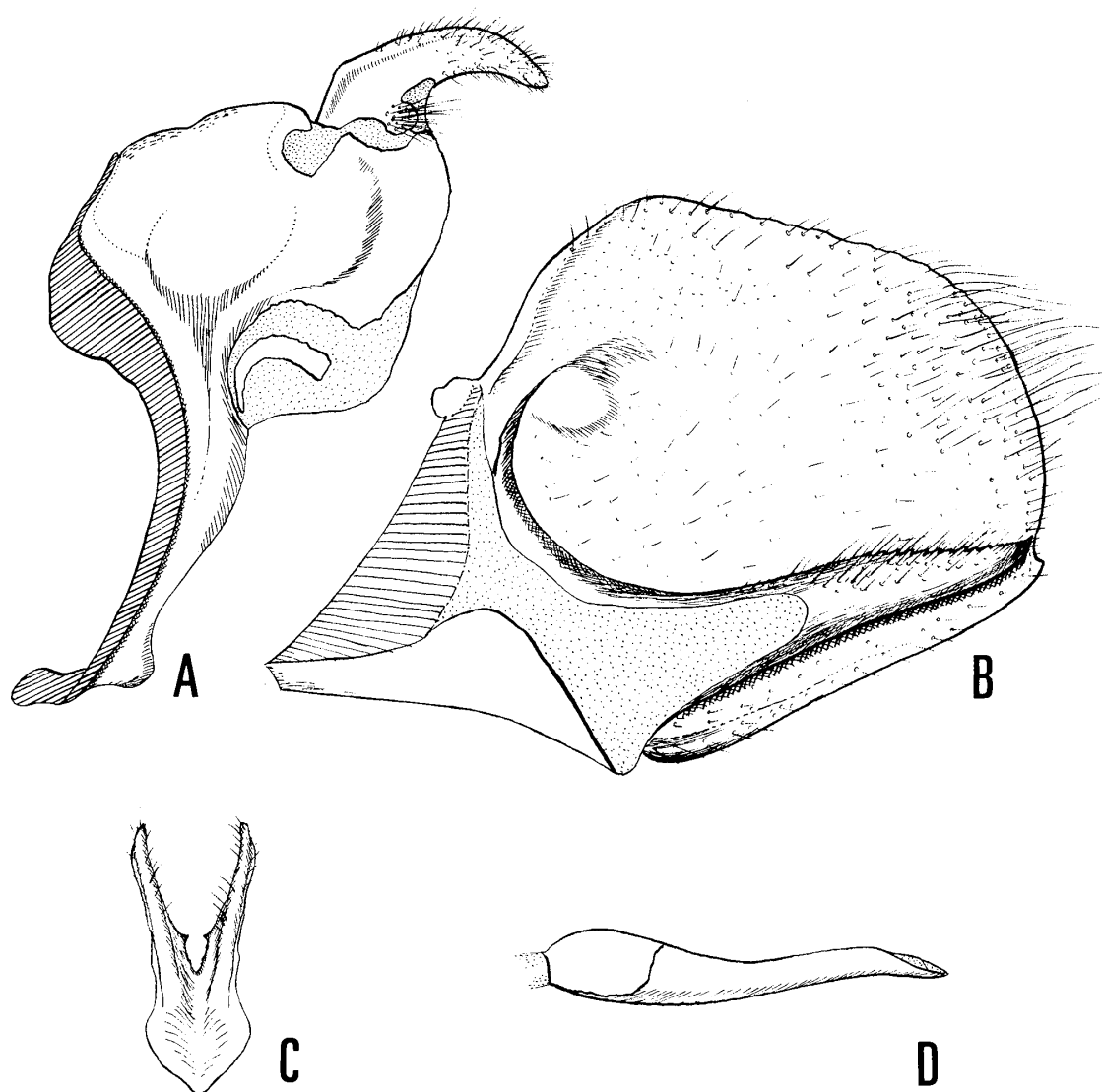


Fig. 4. Male genitalia of *Parnassius cephalus horii* ssp. nov. A. Lateral aspect of ring ; B. Inner aspect of right valva ; C. Posterior aspect of juxta ; D. Lateral aspect of phallus.

marginal; apex considerably pointed; margin rounded; ciliae black, 0.6–0.8 mm length. Upperside of hindwing pure white; median ocellus large, usually crimson; costal ocellus small; spot between basal and costal ocellus very clear; ciliae white. Underside of wings same as male.

Male genitalia: general features extremely similar to those of subsp. *cephalus* GR.-GR., particularly in the shape of juxta, phallus and superuncus, in the shape and position of the harpe on the inside of the valva; the only clear distinction being the uncus, which is rather shorter and thicker than that of subsp. *cephalus* GR.-GR. and subsp. *elwesi* LEECH.

Sphragis: white, length 3.4–4 mm; height 3.4–3.8 mm; maximum width 3.6–4.1 mm; similar in structure to those of subsp. *cephalus* GR.-GR.; the only clear distinction being width of on both sides, which although considerably extended laterally.

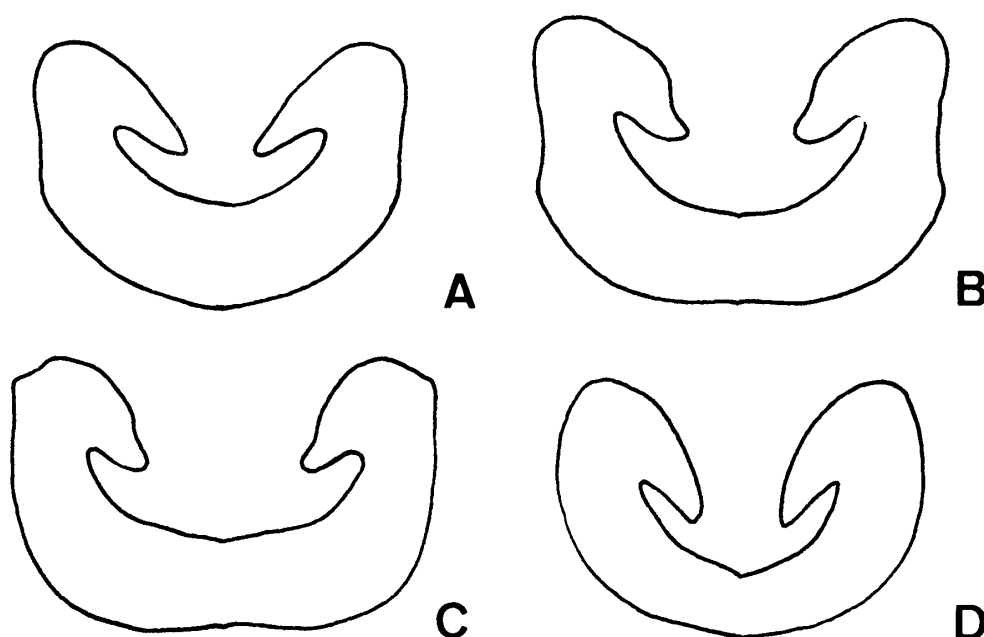


Fig. 5. Superunci of male genitalia of *Parnassius cephalus* subspecies, dorsal aspect. A. *P. cephalus cephalus* GRUM-GRSHIMAILO; B. *P. cephalus elwesi* LEECH; C. *P. cephalus horii* ssp. nov.; D. *P. cephalus maharaja* AVINOFF.

Distribution: Central Nepal.

Holotype: ♂, Nyrasan, 5400 m, Mustang district, Dhaulagiri zone, C. Nepal, 22. vi. 1983, K. HORI leg. (in coll. S. OHSHIMA).

Paratypes: 15 ♂♂ 24 ♀♀, Nyrasan, 4800–5400 m, Mustang district, Dhaulagiri zone, C. Nepal, 22. vi. – 14. vii. 1983, K. HORI leg. (1 ♂ 2 ♀♀ in coll. S. OHSHIMA, 2 ♂♂ 4 ♀♀ in coll. S. OKAUCHI and 11 ♂♂ 18 ♀♀ in coll. K. HORI). 2 ♀♀, Nyrasan, 5000 m, Mustang district, Dhaulagiri zone, C. Nepal, 11. vii. 1981, K. HORI leg. (each 1 ♀ in coll. S. OHSHIMA and K. HORI). 1 ♂, Bharebu, 4800 m, Mustang district, Dhaulagiri zone, C. Nepal, 2. vi. 1981, K. HORI leg. (in coll. S. OHSHIMA).

The subspecies is named after Mr. Katsuhiko HORI, Toyoshina, Nagano in gratitude for his kindness and cooperation.

Remarks. This new subspecies is very similar to subsp. *rileyanus* BRYK in Tibet, but they may be distinguished by the following features:—i) Forewing shape of female wider, near a regular-triangle, while in *rileyanus* narrower; ii) Cell spot of female always touching median vein, while in *rileyanus* not touching; iii) Postmedian band of female always uninterrupted, while in *rileyanus* interrupted or disappeared; iv) Submarginal band thick, while in *rileyanus* thin, never touching marginal.

As mentioned before, subsp. *rileyanus* BRYK is described from only one specimen, a female; no males are known. subsp. *pythia* H. ROTH from Tibet is more whitish as a whole, so it is easy to distinguish *pythia* from subsp. *horii* nova.

At first, I expected that this new subspecies might link *cephalus* and *maharaja*, both because of their ranges and the singularity of the sphragis. But further consideration suggests close affinity with *cephalus*, especially to subsp. *rileyanus* from Tibet, because forewing veins v11 (R_1) and v10 (R_2) do not consistently anastomose.

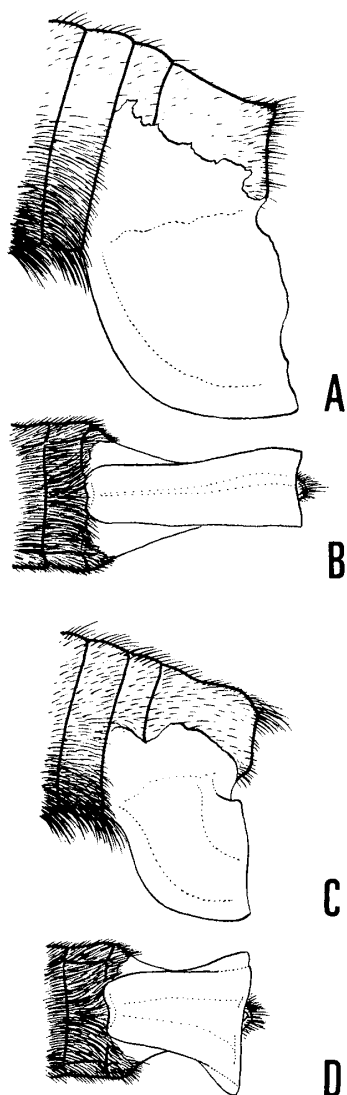


Fig. 6

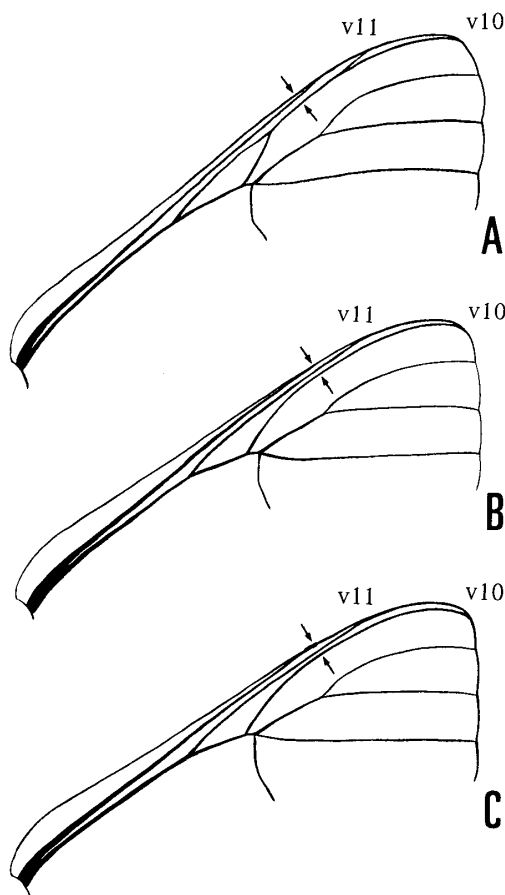


Fig. 7

Fig. 6. Spurs of *Parnassius cephalus* subspecies. A. *P. cephalus elwesi* LEECH, left lateral aspect ; B. Ditto, ventral aspect ; C. *P. cephalus horii* ssp. nov., left lateral aspect ; D. Ditto, ventral aspect.

Fig. 7. Venation of right forewings. A. *P. cephalus maharaja* AVINOFF ; B. *P. cephalus horii* ssp. nov. ; C. *P. cephalus cephalus* GRUM-GRSHIMAILO.

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摘 要

ネパール・ヒマラヤ産 *Parnassius cephalus* GRUM-GRSHIMAILO の 1 新亜種
(鱗翅目：アゲハチョウ科) (大島進一)

ネパール中部の高山域から、*Parnassius cephalus* の 1 新亜種 (ssp. *horii*) を記載した。本新亜種はチベットの Phuse La から知られる亜種 *rileyanus* BRYK に近似するが、雌前翅翅形が幅広く、前翅中室紋が常に中央脈に接触すること、および前翅亜外縁黒帯が著しく発達する点で容易に区別できる。

当初、本新亜種は発見された地理的な位置等から、従来よりその発見が期待されていた *maharaja* と *cephalus* のミッシング・リンクに相当するものではと思われたが、外観、前翅翅脈、および雄交尾器等において、チベット東部から中国西部（四川省、青海省、甘粛省の高地）にかけて分布する真正 *cephalus* の範疇に入るものであるとの結論に達した。しかし、交尾囊が後方に向って大きく開口する点では、判明している限り、従来より知られる本種の他の全ての亜種と異なり（チベットの近似の亜種 *rileyanus* 及び *pythia* の雌タイプ標本はいずれも末交尾で交尾囊は末見）、引き続きこの地域での調査、研究が望まれる。